

# Additions to the family Kokiriidae (Trichoptera)

by A. NEBOISS\*

## Abstract

The family Kokiriidae is characterized, and for the first time recorded from Australia. The New Caledonian genus *Mecynostomella* with its only species *fusca* Kimmins (1953) is transferred from the Family Serico-stomatidae to Kokiriidae. *Tanjistomella verna* (new genus and species) is described from Victoria.

## Introduction

The extensive collecting of insects along Victorian watercourses as part of the ecological surveys undertaken during the last two or three years has added not only interesting distributional data of caddis-flies in Victoria but also numerous entirely new species. The investigations carried out in the Latrobe River valley brought to light a very interesting new caddis-fly species belonging to the family Kokiriidae, previously unknown from Australia. Its existence in Tasmania was known to the author for several years, and the description of the three species occurring there will appear in a publication dealing with the Tasmanian fauna.

## Histoy

Schmid (1955) described the genus *Rhynchopsyche* from Chile in the family Brachycentridae, but explicitly noted a certain resemblance to the Australian genus *Plectrotarsus*. McFarlane (1964) described a new monotypic genus *Kokiria* from New Zealand and placed it in a separate subfamily Kokiriinae within the family Plectrotarsidae. Ross (1967) recognized the close relationship between the Chilean *Rhynchopsyche* and the

New Zealand *Kokiria*, and joined them together to form a new family Rhynchopsychidae which he considered to be closely related to the family Lepidostomatidae. Riek (1968), in his key to the limnephiloid families, elevated the Kokiriinae to family status. The two family names are synonymous, and Kokiriidae (McFarlane, 1964) has priority over Rhynchopsychidae (Ross, 1967).

## Family diagnosis

Ocelli absent; antennae about as long as the anterior wing, basal segment longer than broad but not bulbous; mouth parts elongate in the form of a proboscis; maxillary palpi cylindrical, 3-segmented in male, 5-segmented in female. Scutum and scutellum each with pair of warts.  $R_1$  of the anterior wing curved sharply toward costa basad of pterostigma, connected or joined to Sc for a short distance before running with an even curve to the wing margin. No cross vein connecting  $R_1$  and discoidal cell (it was erroneously shown as present by McFarlane (1964) fig. 59; this was checked and its absence confirmed by that author in personal communication). Posterior wing with discoidal cell open (aberrantly closed in some *Kokiria miharo* specimens),  $R_1$  ending blindly, becoming untraceable distally, or joining Sc shortly before wing margin; 3-5 frenalur bristles at the humeral angle.

Spurs 2:4:4 covered with fine hairs. Riek (1968) (adopted by Malicky (1973)) erroneously stated that they

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are bare; re-examination of *K. miharo* specimens revealed the opposite.

In the search for the family relationship of the Australian species, it was noticed that the New Caledonian species *Mecynostomella fusca* Kimmins (1953) has all the diagnostic characteristics of the family Kokiriidae rather than those of the family Sericostomatidae where it was originally placed. It has been described as having

striking prolonged mouth parts, 3-segmented maxillary palps in the male; ocelli absent; anterior wings with  $R_1$  joining Sc for a short distance basad of pterostigma; and spurs 2:4:4. These key characters, together with the wing venation in general, and the basic structure of the genitalia are considered sufficient to justify transferring this monotypic genus to the family Kokiriidae.

KEY FOR SEPARATING GENERA

(Males only)

- 1. Large patch of modified hairs on the lower basal half of the anterior wing . . . . . *Mecynostomella* Kimmins
- Anterior wing without large patch of modified hairs on basal half . . . . . 2
- 2. Maxillary palp with segment 3 shorter than segment 2 . . . . . *Rhynchopsyche* Schmid
- Maxillary palp with segment 3 as long as or longer than segment 2 . . . . . 3
- 3. Discoidal cell in anterior wing very short, less than half the length of fork 2 . . . . . *Kokiria* McFarlane
- Discoidal cell in anterior wing long, as long as or slightly longer than fork 2 . . . . . *Tanjistomella* gen. n.

Genus *Tanjistomella* gen. n.

Ocelli absent; mouth parts extended to a slender proboscis, which at rest is folded back beneath the head into a special groove; maxillary palp 3-segmented in male, terminal segment slightly longer than second. The head dorsally with only the posterior pair of warts present; eyes large. Pronotum with lateral warts distinctly larger than the middle pair, not touching each other. Scutum and scutellum each with a pair of elongated warts. Anterior wing with  $R_1$  curved and connected with Sc basad of pterostigma, then diverging into concave curve toward the wing margin; discoidal cell as long as or slightly longer than fork 2; thyridial cell slightly shorter than discoidal cell; forks 2, 3 and 5 present. In posterior wing discoidal cell open; forks 1, 2 and 5 present.

Spurs 2:4:4, covered with fine hairs.

Type species: *Tanjistomella verna* gen. et sp.n.

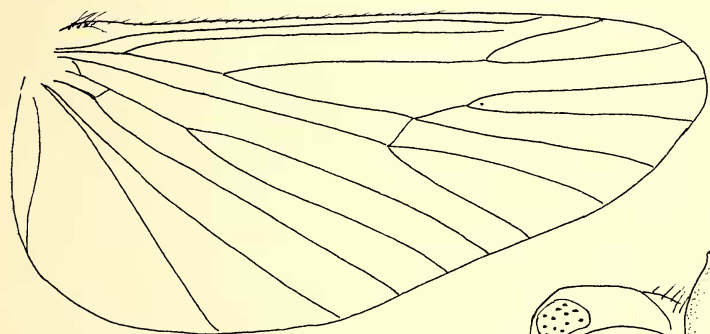
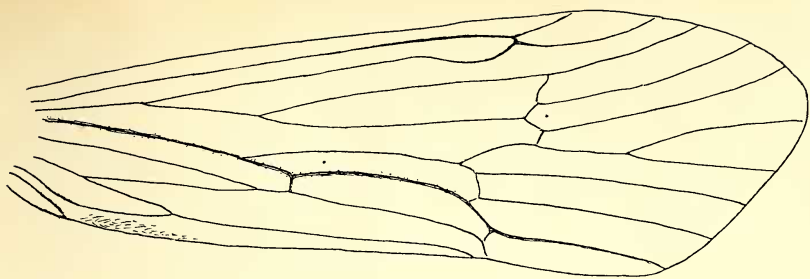
*Tanjistomella verna* sp. n.

Figs. 1-8.

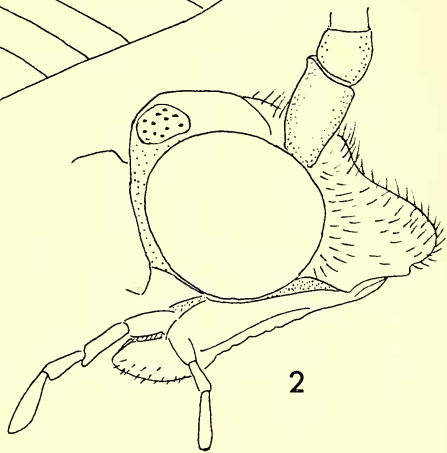
Insect of moderate size, dark brown, legs and abdomen yellowish-brown. Head rather narrow, eyes large, black; frons extended forward to a narrow distally rounded snout. Warts on scutellum narrow, elongated, almost parallel, about half the length of scutellum. Tibiae slender, evenly and densely covered with fine hairs, the posterior tibia with a few small spines; spurs slender, apically pointed, covered with fine hairs. Several small spines on tarsal segments, more so on basal than the terminal ones.

♂ genitalia with segment x produced to a narrow, posteriorly truncate lobe; superior appendages short, broad, interior angles pointed; inferior appendages single segmented, short, pointed apically; phallus terminating with a pair of large rounded dorsal lobes and a downturned finger-like median process ventrally.

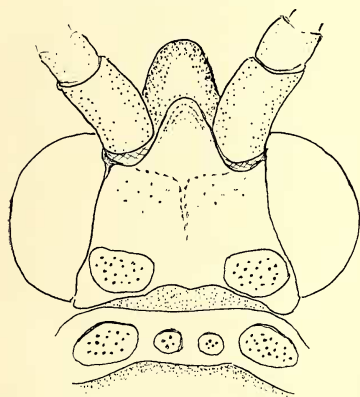
♀ unknown.



1



2



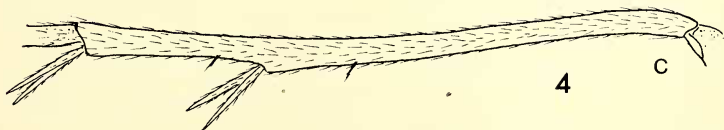
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a



b



4

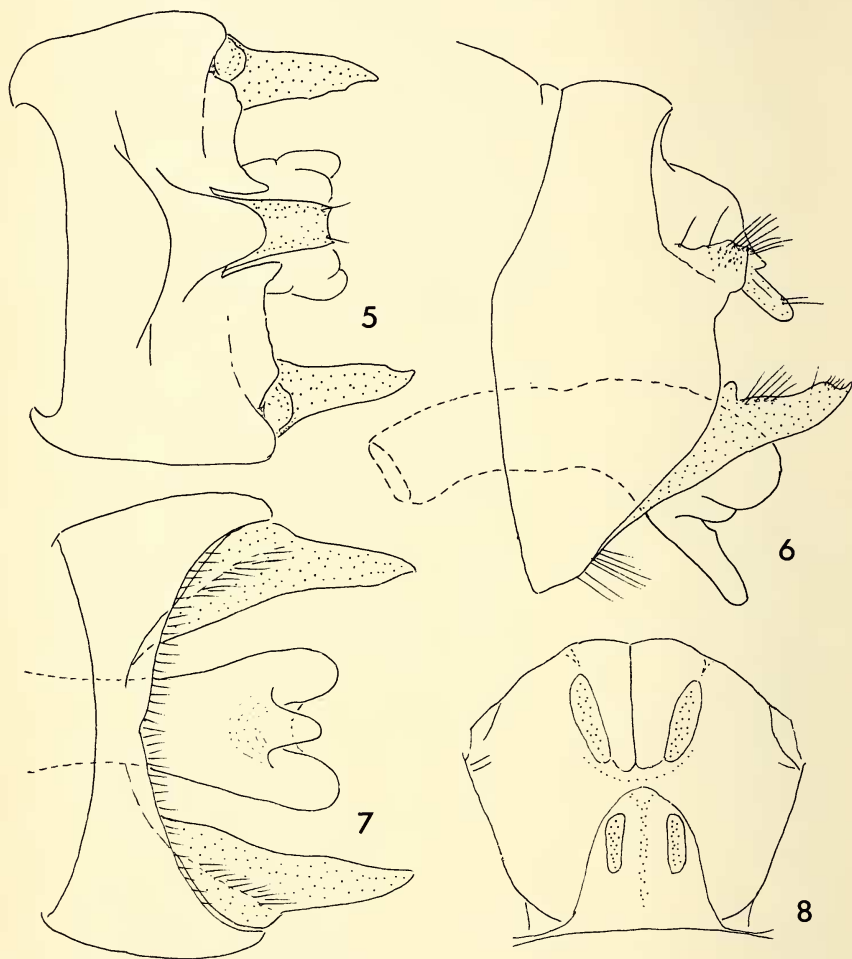
c

Length of anterior wing: ♂ 9 mm.  
 Type material: Holotype ♂ (T4544), paratype ♂ (T4545) (genitalia preparation PT-446). Tanjil River, Walhalla Road, Victoria, 22 Oct. 1973. Light trap. C. McCubbin and A. Morison. Specimens pre-

served in alcohol, National Museum of Victoria.

Acknowledgements.

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Figures 1-8

*Tanjistomella verna* gen. et sp. n. (1) — Wing venation; (2) — head lateral; (3) — head and pronotum dorsal; (4a) — anterior tibia, (b) — mid-tibia, (4c) — posterior tibia; (5) — ♂ genitalia dorsal; (6) — ♂ genitalia lateral; (7) — ♂ genitalia ventral; (8) — scutum and scutellum dorsal.

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## Paper and Pearly Nautilus

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Both the Paper and the Pearly Nautilus fall into the *Cephalopod* group, which includes squids, octopus and cuttlefish but the "shells" of each animal serve a completely different purpose.

The shell of the Pearly Nautilus is an actual shell which the animal lives in continuously and never leaves, similar to most shell bearing molluscs.

The "shell" of the Paper Nautilus is not a shell at all, but only a case made by the female in which she lays her eggs. The female grips and makes her egg-case with two flat tentacles adapted for this purpose. When no egg case is present, the animal looks rather like an octopus.

The case is not chambered, but thin, fragile and hollow. Several legends exist about the egg case; one being that they appear on the beach every seven years. This is not correct, for the currents and wind control the time at which anything is beached; also eggs would be laid more regularly than this.

The Paper Nautilus animal feeds on small animals floating on the surface, such as crustacea. Little is known about the animals' life-cycle, and until further observations are made, the above is all we know.

The common Victorian Paper Nautilus is known as *Argonauta nodosa*.

More information however is available about the Pearly Nautilus and its habits.

The shell of this animal is chambered and each separate partition has a hole in the centre (see figure 1). The animal lives in the last and biggest chamber, and as it grows, moves forward and lays down another partition behind it. A slender extension of the body remains down through the holes and serves to fill and empty the chambers with liquid which acts as a weight controller to enable the animal to sink, or float to the surface at will.

The Pearly Nautilus swim by jetting

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